Natural vegetation of the Carolinas:
Classification and Description of
Plant Communities of the Northern-Central Piedmont of North Carolina

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INTRODUCTION

In mid May 2010, the Carolina Vegetation Survey conducted an initial inventory of natural communities within the northern-tier of Piedmont counties of North Carolina. There had never been a project designed to classify the diversity of natural upland and wetland communities throughout this portion of North Carolina. Furthermore, the data captured from these plots will enable us to refine the community classification within the broader region. The goal of this report is to determine a classification structure based on the synthesis of vegetation data obtained from the May 2010 sampling event, and to use the resulting information to develop restoration targets for disturbed ecosystems location in this general region of North Carolina.

STUDY AREA AND FIELD METHODS

From May 15-22 2010, a total of 48 vegetation plots were established throughout the northern tier of counties (from Rockingham to Vance) of North Carolina (Figure 1). Focus locations within the study area included the Caswell Game Land, Goshen Gabbro Forest, Cedar Mountain, and numberous small privately owned tracks in Person and Caswell Counties. Target natural communities throughout the week included mesic and xeric hardpan forests, mesic mixed hardwood forests, basic mesic forests, dry-mesic oak-hickory forests, basic oak-hickory forests, Piedmont Monadnock forests, heath bluffs, Piedmont small stream forests, and upland depression swamps.

Vegetation was sampled following the North Carolina Vegetation Survey protocol described in Peet et al. (1998), and data collected conformed to established and proposed federal standards (see: Jennings et al. 2007, and Federal Geographic Data Committee 2007) http://www.fgdc.gov/standards/projects/FGDC-standards-projects/vegetation/index_html). Plots were subjectively located to best capture the composition of the target plant community. Each plot contained from 1 to 10 100 m^2 modules, the number reflecting the area of visually homogeneous vegetation available to sample. Species presence was recorded across a logarithmic sequence of subplot sizes including 0.01, 0.1, 1, 10, 100, and where sufficient modules were sampled 400 and 1000 m^2. Species cover was recorded individually for up to 4 intensively sampled modules (those containing the nested subplots), and overall cover for the plot was also recorded for species not found in intensively sampled modules. Soil samples were collected and sent to Brookside Laboratories for analysis. Soil nutrients were extracted by the Mehlich III technique. Mean soil nutrient and texture values are summarized by community in Appendix 1. Tree stems were recorded for each plot by diameter.

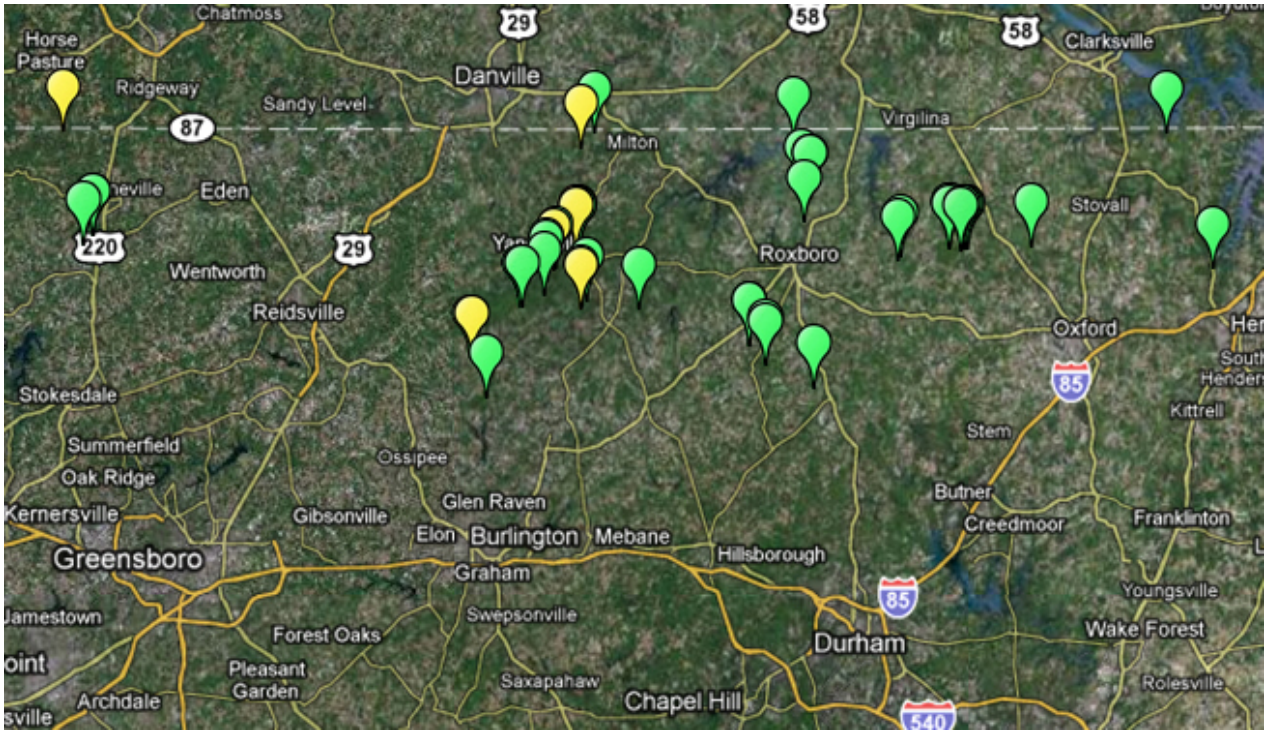

FIGURE 1. Pulse 2010A sample region and established plots. Map courtesy of GoogleMaps: http://maps.google.com/maps?q=http://cvs.bio.unc.edu/maps/120-points.kml.xml

VEGETATION CLASSIFICATION

Plots were classified to association following the US National Vegetation Classification (NVC) standard (Grossman et al. 1998, Jennings et al. 2006) and the Carolina Vegetation Survey's "Vegetation of the Carolinas" project (http://cvs.bio.unc.edu/vegetation.htm). The 'association' is defined as a group of plots having similar species composition, structure, and habitat. Plot assignment was accomplished through a qualitative assessment of vegetation composition, landscape position, hydrologic regime, and soil characteristics. The associations were grouped into higher categories following the classification hierarchy developed by the "Vegetation of the Carolinas" project and include the Formation (e.g., Coastal Plain lowland evergreen forests and shrublands) and Ecological Group (e.g., White cedar forests) levels. The lowest, finest level of the classification scheme used was the NVC association.

Where possible, plots were assigned to an NVC association, identified by association name and unique CEGL identifier. Also, a degree of fit was applied to the classification scheme based on the plot's correspondence with its assigned association. The 5-level scale of fit we employ conforms to that the standards employed by the VegBank archive and the proposed US Federal standards (see Jennings et al. 2007): Excellent, Good, Fair, Poor (similar but wrong), and Incorrect (unambiguously wrong). In some cases it was necessary to assign a plot to more than one community because of its intermediate

character. In 29 of the 48 cases (see Appendix 2), the fit was either fair or poor, suggesting a need for numerous revisions of the NVC to better represent the vegetation of this part of North Carolina.

For each community type to which we assigned plots, we provide a brief summery. We also provide hotlinks (with the CEGL codes) to the formal descriptions of these types in the National Vegetation Classification. Where the fit is weak or poor, we briefly explain the problem. Composition is shown in detail in Appendix 3 where the prevalent species (most frequent species with the number equal to the average number of species per 100 m^2 plot) are listed by constancy among plots, and mean percent cover where present. Average cover class was calculated using the geometric mean of the true cover range for each cover class. Vegetation that was novel or failed to fit well in established associations of the National Vegetation Classification are summarized in Appendix 2. Botanical nomenclature follows Weakley 2006.

Our classification yielded assignments to 21 high-order community associations, from 14 Ecological Groups and 8 Formations. A community characterization is presented for each association below. Names are based on the naming system used in the U.S. National Vegetation Classification (NatureServe 2007). Names reflect species with high constancy and high cover; a "-" separates species within the same vertical strata, while a "/" separates species of different strata.

ASSOCIATIONS

I. Piedmont Mesic Forests

A. Felsic Dry - Mesic Forests

1) *Quercus alba - Carya alba / Euonymus americanus / Hexastylis arifolia* Forest (CEGL006227)

NVC Fit = Fair Plots = 120-10-1433

This Piedmont oak-hickory forest occurs on mesic sites of subacidic soils and is typically dominated by a canopy of *Quercus alba* and *Carya alba*. The NVC recognizes the need to clarify this type, in relation to other Piedmont mesic hardwood forests and possibly expand its range. Currently, this forest has not been described in North Carolina. The plot here represents a gradient between a mesic oak-hickory and a mixed hardwood forest. The canopy is dominated by large diameter *Fagus grandifolia* and *Quercus rubra*. Other canopy species include *Carya alba* and *Quercus alba*. Subcanopy and shrub species include *Acer rubrum, Carpinus caroliniana, Fraxinus americana, Viburnum acerifolium, Nyssa sylvatica*, and *Cercis canadensis*. The herbaceous layer includes Polystichum *acrostichoides, Polygonatum biflorum, Euonymus americanus,* and *Arisaema triphyllum*. This plot is located on Block B of the Caswell Game Lands, in Caswell County, North Carolina.

2) *Fagus grandifolia - Liriodendron tulipifera / Euonymus americanus / Athyrium filix-femina* ssp. *asplenioides* Forest (CEGL007201)

NVC Fit = Fair Plots = 120-10-1434

This association represents a Piedmont mesic hardwood forest co-dominated by *Fagus grandifolia* and *Liriodendron tulipifera*, and typically lacking an oak component. It has been described from Alabama, and adjacent states, but not from North Carolina. The plot sampled here occurs on Block B of the Caswell Game Lands, in Caswell County, North Carolina. The canopy is dominated by large diameter *Fagus grandifolia, Liriodendron tulipifera, Acer rubrum*, and *Carya spp*. Subcanopy and shrub species include the canopy dominants, as well as *Carpinus caroliniana* and *Fraxinus americana*. Frequent herbs include Euonymus americanus and Polystichum acrostichoides.

3*) Fagus grandifolia - Quercus rubra / Cornus florida / Polystichum acrostichoides - Hexastylis virginica* Forest (CEGL008465)

NVC Fit = Good Plots = 120-06-1438

This association describes the typical mesic mixed hardwood forests of the Piedmont from North Carolina to Georgia. The canopy of these forests is usually dominated by mesophytic species (including the association nominals) and the herbaceous stratum is often diverse and lush. Sites that these forests are found on are typically steep protected ravines on lower slope positions, or north-facing side slopes. This

plot is located along a northeastern slope above Marlowe Creek, in Person County, North Carolina. Large diameter *Fagus grandifolia, Liriodendron tulipifera*, and *Carya spp*. are the canopy dominants. The subcanopy and shrub strata are dominated by canopy trees, as well as *Acer floridanum, Carpinus caroliniana*, and *Cornus florida*. The herbaceous layer is diverse, and *includes Arisaema triphyllum, Botrypus virginiana*, *Tiarella wherryi*, and *Epifagus virginiana*.

B. Mafic Dry - Mesic Forests

1) *Quercus alba - Quercus rubra - Quercus prinus - Tilia americana var. caroliniana / Ostrya virginiana* Forest (CEGL004542)

NVC Fit = Poor to Fair Plots = 120-06-1431, 120-06-1437, 120-08-1432, 120-08-1433

This Piedmont forest occurs on basic, typically rocky, substrate and on mesic slopes or streambeds. The canopy of this type is composed of a mixture of oaks growing with hardwood species typical of mafic soils. The fair-fit plot examples of this association occur within Caswell Game Lands of Caswell County, North Carolina; the one poor-fit example occurs on Crooked Run Wildlife Management Area, of Vance County, North Carolina. These do not correspond with the NVC-described association because they are not true dry basic forests. Although they all occur on basic (or even mafic) substrate, they occur in intermediate (not mesic or xeric) soil conditions. Constant canopy and subcanopy species found within these plots include *Carpinus caroliniana, Acer floridanum, Carya cordiformis*, and *Ostrya virginiana*. Other important canopy and subcanopy species that occur with < 100% constancy include *Quercus alba,*

Cercis canadensis, Tilia americana, and *Liquidambar styraciflua*. Frequent herbaceous species include *Polystichum acrostichoides, Maiathemum racemosum, Galium aparine, Podophyllum peltatum*, and *Adiantum pedatum*.

2) *Fagus grandifolia - Quercus rubra / Acer barbatum - Aesculus sylvatica / Actaea racemosa - Adiantum pedatum* Forest (CEGL008466)

NVC Fit = Fair to Excellent Plots = 120-01-1435, 120-03-1431, 120-04-1434, 120-07-1432, 120-07-1435, 120-07-1436, 120-07-1437, 120-08-1431

This association represents Piedmont mixed hardwood forests of intermediate to basic soil fertility and mesic productivity. This is the typical basic mesic mixed hardwood forest of the Piedmont from Virginia to Georgia. Most of the plots sampled during this study that are described for this association occur on Caswell Game Lands, in Caswell County, North Carolina. The canopy of these plots are typically dominated by *Fagus grandifolia*; they also include *Fraxinus americana, Quercus alba, Quercus rubra*, and *Carya alba*. Subcanopy and shrub species include *Viburnum acerifolium, Acer floridanum, Carpinus caroliniana, Ulmus rubra, Asimina triloba,* and *Ulmus alata*. The herbaceous component also reflects the basic mesic condition of the substrate. Species include *Arisaema triphyllum, Maianthemum racemosum, Adiantum pedatum, Actaea racemosa, Sanguinaria canadensis*, and *Anemone americana*. Plots that are described as a 'fair fit' to this type are so because they represent an intermediate between basic and acidic soil chemistry.

C. Bluff Forests

1) *Quercus prinus - Quercus alba / Oxydendrum arboreum / Kalmia latifolia* Forest (CEGL004415)

NVC Fit = Fair Plots = 120-04-1433

This forest occurs on steep, north-facing bluffs in the Piedmont and Coastal Plain of the Carolinas. The canopy is typically dominated by *Quercus spp*., while the subcanopy is dominated by *Oxydendrum arboreum*. The shrub stratum is composed of a dense enclosure of *Kalmia latifolia*. The herbaceous stratum is usually sparse. This plot occurs on the Mayodan Bluffs, in Rockingham County, North Carolina. The canopy is composed of Quercus montana, Quercus rubra, and Quercus stellata, while the subcanopy includes canopy species, as well as *Carya ovata, Viburnum acerifolium,* and *Acer rubrum*. The herbaceous stratum is relatively diverse for a Piedmont bluff forest; species include Danthonia spicata, Asplenium platyneuron, Solidago spp., and Cunila origanoides. This plot does not correspond well with the NVC-described association due to the absence of Kalmia latifolia and diverse herbaceous layer.

II. Piedmont Subxeric Oak and Hickory Forests

A. Basic Oak-Hickory Forests

1) *Quercus alba - Carya ovata / Cercis canadensis* Forest (CEGL007232)

NVC Fit = Fair to Good Plots = 120-01-1437, 120-04-1430

This association represents dry to mesic oak-hickory dominated forests occurring over fertile, base-rich soils of the southern Piedmont. The canopy of this community is often dominated by *Quercus alba*, occurring with other oaks and *Carya ovata, Carya carolinae-septentrionalis, Carya glabra*, and/or *Carya alba*. These forests typically lack high density of acidic-tolerant species like *Oxydendrum arboreum* and other members of Ericaceae. The two plots sampled during this survey are characterized by a mixed canopy of *Quercus alba, Quercus velutina,Quercus rubra, Fraxinus americana*, and *Carya spp*. The subcanopy is composed of *Acer floridanum, Acer rubrum, Cercis canadensis, Cornus florida, Ostrya virginiana,* and, in one example *Oxydendrum arboreum*. Herbaceous species found in these two plots include *Galium circaezans, Polygonatum biflorum, Brachyelytrum erectum, Euonymus americanus, and Uvularia perfoliata*.

2) *Quercus alba - Quercus stellata - Carya carolinae-septentrionalis / Acer leucoderme - Cercis canadensis* Forest (CEGL007773)

NVC Fit = Poor to Excellent Plots = 120-01-1436, 120-02-1430, 120-06-1434, 120-06-1435

This association represents dry oak-hickory dominated forests occurring over mafic rock in the Carolina Slate Belt. The canopy is typically dominated by *Quercus alba* and *Quercus stellata*. Other canopy and

subcanopy species are indicative of mafic, nutrient-rich soil conditions. The four plots attributed to this association are characterized by a canopy and subcanopy of *Quercus alba, Carya alba, Fraxinus americana, Acer rubrum, Cercis canadensis, Quercus stellata*, and *Nyssa sylvatica*. In plot 06-1434, the canopy is dominated by frequent, and large diameter *Acer saccharum*; although this plot does not fit well compositionally with the NVC-described association, it could represent a variant based on its disturbance regime, and successional status. The herbaceous layer is sparse in these forests. Frequent species include *Uvularia perfoliata, Euonymus americanus,* and *Dichanthelium boscii*.

B. Acidic Oak-Hickory Forests

1) *Quercus (prinus, coccinea) / Kalmia latifolia / (Galax urceolata, Gaultheria procumbens)* Forest (CEGL006271)

NVC Fit = Fair Plots = 120-06-1439, 120-10-1432

This chestnut oak dominated forest occurs on ridgetops and southerly facing exposures, on acidic, infertile soils, within the Piedmont and Southern Blue Ridge Mountains of the southeastern US. These stands are often dominated by a canopy of *Quercus montana*, occurring with other dry site oak species (*Quercus velutina, Quercus coccinea*, and *Quercus falcata*), and a shrub stratum composed of ericaceous species like *Kalmia latifolia, Vaccinium stamineum, Vaccinium pallidum, Gaylussacia ursina*, and

Gaylussacia baccata. The subcanopy often contains *Nyssa sylvatica, Oxydendrum arboreum*, and *Acer rubrum*. The two plots identified to this association sampled during this survey contain the aforementioned species, as well as substantial dominance of *Quercus alba* in the overstory. These stands may represent a more subxeric - intermediate gradient of this community type.

2) *Quercus falcata - Quercus alba - Carya alba / Oxydendrum arboreum / Vaccinium stamineum* Forest (CEGL007244)

NVC Fit = Poor to Good Plots = 120-01-1432, 120-01-1439

This is the typical acidic, dry oak-hickory forest of the Piedmont from Virginia to Georgia. The canopy and subcanopy of these forests is dominated by a mixture of dry to intermediate site oaks (including, *Quercus falcata, Quercus alba, Quercus velutina, Quercus coccinea*, and *Quercus stellata*), *Carya spp*., *Acer rubrum, Oxydendrum arboreum, Nyssa sylvatica, Liriodendron tulipifera*, and *Cornus florida*. The stands of this type sampled during this survey are dominated by *Quercus alba, Quercus coccinea, Nyssa sylvatica, Acer rubrum*, and *Quercus falcata*. Shrub and vine species include *Smilax glauca, Vitis rotundifolia, Vaccinium stamineum, Vaccinium fuscatum*, and *Viburnum prunifolium*. Plot 01-1432 is located on the Alderidge Creek Flats site in Person County, North Carolina. Although this plot does

contain species characteristic of dry acidic oak-hickory forests, it also contains species indicative of intermittently flooded sites (e.g., *Quercus phellos* and *Chasmanthium laxum*). This plot occurs on a landform where significant water ponding occurs during significant rainfall events.

3) *Quercus alba - Quercus (rubra, coccinea) - Carya (alba, glabra) / Vaccinium pallidum* Piedmont Dry-Mesic Forest (CEGL008475)

NVC Fit = Poor to Excellent Plots = 120-01-1430, 120-01-1440, 120-06-1436

This is a typical acidic, submesic to subxeric oak-hickory forest of the Piedmont from Virginia to Georgia. The canopy and subcanopy of these forests is often dominated by a mixture of oaks (with *Quercus alba* being the most prevalent) and hickories, as well as *Liriodendron tulipifera, Acer rubrum, Liquidambar styraciflua, Oxydendrum arboreum*, and *Cornus florida*. The stands of this type sampled during this survey are dominated by *Quercus alba, Acer rubrum, Carya alba, Nyssa sylvatica, Quercus coccinea, Liquidambar styraciflua, Oxydendrum arboreum*, and *Quercus rubra*. Dominant shrub, vine, and herb species include *Vaccinium pallidum, Vitis rotundifolia, Parthenocissus quinquefolia, Euonymus americanus* and *Endodeca serpentaria*. Plot 01-1430, which does not fit well with this NVC-described association, is located on the Adcock Road Hardwood Forest site in Person County, North Carolina. Although this plot does contain species characteristic of intermediate oak-hickory forests, it also contains species indicative of intermittently flooded sites (e.g., *Quercus phellos*) or hardpan forests (e.g., *Quercus stellata*, and *Danthonia spicata*).

C. Felsic Monadnock Forests

1) *Quercus prinus - Quercus alba / Oxydendrum arboreum / Vitis rotundifolia* Forest (CEGL006281)

NVC Fit = Good Plots = 120-06-1432, 120-10-1431

These two plots occur on felsic monadnocks of Granville and Person Counties, North Carolina. The canopy of these stands is dominated by *Quercus montana*, while the understory is comprised of *Oxydendrum arboreum, Acer rubrum, Nyssa sylvatica, Pinus echinata*, and *Quercus alba*. The shrub stratum is comprised of *Vaccinium pallidum* and *Vaccinium stamineum*. The herbaceous layer is extremely sparse in this forest type.

III. Piedmont Xeric Forests and Woodlands

A. Felsic Xeric Oak Forests

1) *Quercus prinus - Quercus velutina / Oxydendrum arboreum - Cornus florida* Forest (CEGL008522)

NVC Fit = Poor Plots = 120-03-1430

This association represents dry chestnut oak dominated forests that generally lack heath species. It has been described for portions of western Virginia only. This plot is located on Cedar Mountain, in Rockingham County, North Carolina. The canopy is codominated by *Quercus montana* and *Quercus rubra*. The herbaceous layer in this plot is more diverse than it is described for this association. Species include *Hieracium venosum, Clitoria mariana, Danthonia spicata*, and *Antennaria plantaginifolia*. This plot probably fits closer to CEGL007267: Quercus prinus - (Quercus rubra) - Carya spp. / Oxydendrum arboreum - Cornus florida Forest.

B. Mafic Glades and Barrens

1) *Quercus stellata - Carya (carolinae-septentrionalis, glabra) - (Quercus marilandica) / Ulmus alata / (Schizachyrium scoparium, Piptochaetium avenaceum)* Woodland (CEGL003714)

NVC Fit = Poor to Good Plots = 120-04-1432, 120-04-1435, 120-06-1433, 120-07-1430

This forest type occurs on flat uplands of mafic igneous rock in Triassic basins of the southeastern Piedmont. They generally develop dense subsurface 'hardpan' soil, with high shrink-swell properties (montmorillonitic soil). These conditions often limit root development, and can lead to an open, stunted tree canopy. The canopy of these plots is dominated by the following species: *Quercus alba, Ulmus alata, Juniperus virginiana, Quercus stellata, Carya glabra, Fraxinus americana,* and *Quercus phellos*. Plot

06-1433 is classified as a poor fit to this association due to the occurrence of more mesophytic herbaceous species.

IV. Piedmont Woodlands and Glades

A. Mafic Glades and Barrens

1) *Juniperus virginiana var. virginiana - Ulmus alata / Schizachyrium scoparium* Woodland (CEGL004443)

NVC Fit = Fair Plots = 120-08-1430

This mafic and calcareous influenced woodland occurs on steep rock outcrops of the Piedmont of North Carolina and Virginia, and is characterized by an open canopy of *Juniperus virginiana* var. *virginiana* and *Ulmus alata*. This plot is located on the South River Outcrops of Person County, North Carolina. Its canopy and subcanopy are dominated by *Juniperus virginiana* var. *virginiana*, *Quercus stellata, Acer rubrum*, and *Carya spp*. The nominal species, *Ulmus alata*, is only a minor component in this stand. The shrub stratum is not well developed in this example. The herbaceous stratum is dominated by Graminoids. Dominant species include *Schizachyrium scoparium, Danthonia spicata, Poa chapmaniana,* and *Piptochaetium avenaceum*.

V. Piedmont Shrubby Woodlands

A. Pine-Oak Heath Bluffs

1) *Pinus echinata - Pinus virginiana / Rhododendron minus - Kalmia latifolia* Woodland (CEGL003563)

NVC Fit = Fair Plots = 120-01-1434

This rare woodland vegetation type is known to occur on north-facing bluffs, associated with Carolina slate rock, within the Piedmont of North Carolina. These communities are dominated by *Pinus echinata* and/or *Pinus virginiana*. However, this plot does not contain any pine species. Instead, the canopy here is dominated by *Fraxinus americana* and *Quercus montana*. The herbaceous layer is dominated by *Piptochaetium avenaceum* and *Danthonia spicata*. This plot lacks either of the Ericaceous shrub association nominals or a well-developed shrub stratum.

VI. Piedmont Poorly Drained Woodlands

A. Hardpan Oak-Pine Forests

1) *Quercus stellata - (Quercus marilandica) / Gaylussacia frondosa* Acid Hardpan Woodland (CEGL004413)

NVC Fit = Good Plots = 120-01-1433

This association represents acidic xeric hardpan forests of the North Carolina Piedmont. Canopies are dominated by some combination of xerophytic to intermediate site oaks--*Quercus stellata, Quercus alba, Quercus marilandica, Quercus coccinea* and/or *Quercus falcata*--occurring with *Nyssa sylvatica, Acer rubrum*, and *Pinus echinata*. The shrub stratum is characterized by short heath species including *Gaylussacia frondosa, Gaylussacia dumosa, Vaccinium pallidum*, and *Lyonia ligustrina*. Due to the acidity of soil in these woodlands, the herbaceous layer is typically poorly developed. This plot occurs on the Alderidge Creek Flats site in Person County, North Carolina. The canopy is dominated by Quercus stellata, with lesser amount of *Acer rubrum, Nyssa sylvatica, Quercus falcata*, and *Carya carolinae-septentrionalis*. The shrub layer is dominated by *Vaccinium tenellum, Vaccinium stamineum*, and *Juniperus virginiana* var. *virginiana*.

VII. Piedmont Alluvial Forests and Shrublands

A. Large River Floodplain and Levee Forests

1) *Liriodendron tulipifera / Asimina triloba / Arundinaria gigantea* ssp. *gigantea* Forest (CEGL004419)

NVC Fit = Fair Plots = 120-07-1433, 120-07-1434

This Piedmont floodplain forest occurs on sandy levees of large rivers, and is characterized by a canopy dominated by *Liriondendron tulipifera*, occurring with a mixture of riverine and upland tree species. The understory and shrub layers are often composed of *Carpinus caroliniana* and *Asimina triloba*. These two plots are located on small alluvial systems of Person County, North Carolina. The canopy of these stands includes *Acer rubrum, Liquidambar styraciflua, Fraxinus americana, Liriodendron tulipifera*, and *Betula nigra*. The understory and shrub layers are composed of *Carpinus caroliniana, Lindera benzoin*, and *Ostrya virginiana*. The herbaceous layer is diverse, and characteristic species include *Polygonatum biflorum, Lonicera japonica, Arisaema triphyllum, Carex blanda, Galium aparine*, and *Persicara virginiana*. These plots are assigned a fair fit value to the NVC-described association because they occur in stands that are not dominated by *Liriodendron tulipifera*.

2) *Platanus occidentalis - Celtis laevigata - Fraxinus pennsylvanica / Lindera benzoin - Ilex decidua / Carex retroflexa* Forest (CEGL007730)

NVC Fit = Good Plots = 120-06-1430

This Piedmont/Coastal Plain floodplain forest occurs on terraces of rivers and large creeks, and is characterized by a canopy co-dominated by *Platanus occidentalis, Celtis laevigata,* and *Fraxinus*

pennsylvanica. This plot occurs on the Dan River in northern Caswell County, North Carolina. The canopy is co-dominated by a mixture of riverine species, including *Acer negundo, Platanus occidentalis, Celtis laevigata, Ulmus americana*, and *Fraxinus pennsylvanica*. The shrub and vine layers are well-developed, and dominated by *Lindera benzoin, Toxicodendron radicans*, and *Ligustrum japonicum*. The herbaceous layer includes *Carex grayi, Elymus virginicus, Laportea canadensis*, and *Alliaria petiolata*, among others.

B. Small Stream Floodplain Forests

1) *Liquidambar styraciflua / Lindera benzoin / Arisaema triphyllum* ssp*. triphyllum* Forest (CEGL004418)

NVC Fit = Poor Plots = 120-01-1431

This forest of the Coastal Plain and Piedmont of Virginia and North Carolina occurs on small stream alluvial zones, and is characterized by a canopy co-dominated by *Liquidambar styraciflua, Liriodendron tulipifera, Platanus occidentalis*, and *Acer rubrum*. The understory may contain any number of upland or alluvial species, and the herbaceous stratum is often species rich. This plot, which is located on the Adcock Road Hardwood Forest site of Person County, North Carolina, is characterized by a canopy that bears little resemblance to the species described for this association. In this plot, the canopy is

dominated by *Quercus michauxii*, occurring with *Carya carolinae-septentrionalis, Liquidambar styraciflua, Acer rubrum*, and *Nyssa sylvatica*. The shrub layer is poorly developed, while the herbaceous layer is well-developed and species rich. Species include *Danthonia spicata*, *Glyceria striata*, *Galium obtusum* var. *filifolium*, *Leersia virginica*, and *Oxalis dillenii*.

VIII. Piedmont Wooded Depression Swamps

A. Wooded Depression Swamps

1) *Quercus phellos / Carex (albolutescens, intumescens, joorii) - Chasmanthium sessiliflorum / Sphagnum lescurii* Forest (CEGL007403)

NVC Fit = Poor to Excellent Plots = 120-01-1438, 120-04-1431, 120-04-1436, 120-04-1437, 120-07-1431

This association represents upland depression swamps of the Carolina and Virginia Piedmont, dominated by an often pure canopy of *Quercus phellos*. Sedges are often the characteristic species of the herbaceous layer. Species may include *Carex albolutescens*, *Carex intumescens*, and *Carex joorii*. Plot 04-1437 does not correspond well with this association, because of the co-dominance of canopy species like *Carya glabra, Acer rubrum, Ulmus alata*, and *Fraxinus americana*. This plot may be more characteristic of a mesophytic hardpan forest.

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Appendix 1: Soil Nutrient and Texture Values Summarized by Association. Specific soil variables include pH, Organic Matter (%), exchangeable cations (Ca, Mg, K, Na, Mn; ppm), texture class (clay, silt, sand; %).

Community Type	PH	Organic	Calcium	Magnesium	Potassium	Sodium	Manganese	Sand %	Silt %	Clay %
I.A.1: *Quercus alba - Carya alba / Euonymus americanus / Hexastylis arifolia* Forest (CEGL006227)	4.5	3	339	134	60	46	106	55	37	8
I.A.2: *Fagus grandifolia - Liriodendron tulipifera / Euonymus americanus / Athyrium filix-femina* ssp. *asplenioides* Forest (CEGL007201)	5.0	5	589	101	73	48	229	51	41	8
I.A.3: *Fagus grandifolia - Quercus rubra / Cornus florida / Polystichum acrostichoides - Hexastylis virginica* Forest (CEGL008465)	5.1	8	1008	211	121	46	237	40	51	8
I.B.1: *Quercus alba - Quercus rubra - Quercus prinus - Tilia americana var. caroliniana / Ostrya virginiana* Forest (CEGL004542)	5.4	5	1240	225	91	36	95	66	29	5
I.B.2: *Fagus grandifolia - Quercus rubra / Acer barbatum - Aesculus sylvatica / Actaea racemosa - Adiantum pedatum* Forest (CEGL008466)	5.3	6	1330	287	96	44	96	60	32	8
I.C.1: *Quercus prinus - Quercus alba / Oxydendrum arboreum / Kalmia latifolia* Forest (CEGL004415)	4.4	9	303	65	91	49	44	26	62	12
II.A.1: *Quercus alba - Carya ovata / Cercis canadensis* Forest (CEGL007232)	5.5	7	1225	252	65	41	304	60	30	10
II.A.2: *Quercus alba - Quercus stellata - Carya carolinae-septentrionalis / Acer leucoderme - Cercis canadensis* Forest (CEGL007773)	5.5	8	1222	206	53	41	390	48	43	9
latifolia / (Galax urceolata, Gaultheria procumbens) Forest (CEGL006271)	4.4	6	150	27	56	45	20	37	48	15
II.B.2: *Quercus falcata - Quercus alba - Carya alba / Oxydendrum arboreum / Vaccinium stamineum* Forest (CEGL007244)	4.3	5	157	31	42	38	7	42	40	17
II.B.3: *Quercus alba - Quercus (rubra, coccinea) - Carya (alba, glabra) / Vaccinium pallidum* Piedmont Dry-Mesic Forest (CEGL008475)	4.5	4	207	66	51	36	21	47	41	12
II.C.1: *Quercus prinus - Quercus alba / Oxydendrum arboreum / Vitis rotundifolia* Forest (CEGL006281)	4.3	6	118	23	43	41	3	39	45	16

Community Type	PH	Organic	Calcium	Magnesium	Potassium	Sodium	Manganese	Sand %	Silt %	Clay %
III.A.1: *Quercus prinus - Quercus velutina / Oxydendrum arboreum - Cornus florida* Forest (CEGL008522)	4.2	19	814	119	102	38	133	50	41	9
III.B.1: *Quercus stellata - Carya (carolinae-septentrionalis, glabra) - (Quercus marilandica) / Ulmus alata / (Schizachyrium scoparium, Piptochaetium avenaceum)* Woodland (CEGL003714)	4.8	8	807	132	64	55	149	51	43	6
IV.A.1: *Juniperus virginiana var. virginiana - Ulmus alata / Schizachyrium scoparium* Woodland (CEGL004443)	4.7	13	348	59	93	51	32	46	47	6
V.A.1: *Pinus echinata - Pinus virginiana / Rhododendron minus - Kalmia latifolia* Woodland (CEGL003563)	4.6	7	846	228	114	52	94	37	45	18
[illegible] *Gaylussacia frondosa* Acid Hardpan Woodland (CEGL004413)	4.2	4	172	31	29	59	2	63	28	10
VII.A.1: *Liriodendron tulipifera / Asimina triloba / Arundinaria gigantea* ssp. *gigantea* Forest (CEGL004419)	5.4	7	1511	297	56	56	259	52	42	6
VII.A.2: *Platanus occidentalis - Celtis laevigata - Fraxinus pennsylvanica / Lindera benzoin - Ilex decidua / Carex retroflexa* Forest (CEGL007730)	5.2	5	1138	211	97	50	88	52	36	12
VII.B.1: *Liquidambar styraciflua / Lindera benzoin / Arisaema triphyllum* ssp. *triphyllum* Forest (CEGL004418)	4.3	4	280	114	47	54	45	43	41	16
VIII.A.1: *Quercus phellos / Carex (albolutescens, intumescens, joorii) - Chasmanthium sessiliflorum / Sphagnum lescurii* Forest (CEGL007403)	4.6	17	681	278	73	56	118	34	49	17

Appendix 2: Association Groups with Poor or Fair Fit

CEGL	# of Plots	NVC Fit	Reason
Quercus alba - Carya alba / Euonymus americanus / Hexastylis arifolia Forest (CEGL006227)	1	Fair	Plot represents a gradient between a mesic oak-hickory and true mesic mixed hardwood forest; NVC type is not described for North Carolina
Fagus grandifolia - Liriodendron tulipifera / Euonymus americanus / Athyrium filix-femina ssp. asplenioides Forest (CEGL007201)	1	Fair	NVC type is not described for North Carolina
Quercus alba - Quercus rubra - Quercus prinus - Tilia americana var. caroliniana / Ostrya virginiana Forest (CEGL004542)	4	Poor to Fair	These plots do not occur on xeric sites
Fagus grandifolia - Quercus rubra / Acer barbatum - Aesculus sylvatica / Actaea racemosa - Adiantum pedatum Forest (CEGL008466)	8	Fair to Excellent	A few plots have species more characteristic of intermediate soil chemistry, rather than a true basic forest
Quercus prinus - Quercus alba / Oxydendrum arboreum / Kalmia latifolia Forest (CEGL004415)	1	Fair	This plot does not contain *Kalmia latifolia*
Quercus alba - Carya ovata / Cercis canadensis Forest (CEGL007232)	2	Fair to Good	The co-dominance of *Oxydendrum arboreum* in plot 04-1430
Quercus alba - Quercus stellata - Carya carolinae-septentrionalis / Acer leucoderme - Cercis canadensis Forest (CEGL007773)	4	Poor to Excellent	Plot 06-1434 is dominated by an even-aged canopy of *Acer saccharum*
Quercus (prinus, coccinea) / Kalmia latifolia / (Galax urceolata, Gaultheria procumbens) Forest (CEGL006271)	2	Fair	These plots are co-dominated by *Quercus alba*
Quercus falcata - Quercus alba - Carya alba / Oxydendrum arboreum / Vaccinium stamineum Forest (CEGL007244)	2	Poor to Good	Although plot 01-1432 contains dry, acidic forest species, it occurs on an intermittently flooded upland flat; this plot is co-dominated by wetland species
Quercus alba - Quercus (rubra, coccinea) - Carya (alba, glabra) / Vaccinium pallidum Piedmont Dry-Mesic Forest (CEGL008475)	3	Poor to Excellent	Plot 01-1430 contains dry-mesic, acidic forest species, but it also contains species associated with flooded landforms and hardpan soils
Quercus prinus - Quercus velutina / Oxydendrum arboreum - Cornus florida Forest (CEGL008522)	1	Poor	NVC Association has been dropped and the plot is out of range; the plot has higher herbaceous diversity than the association suggests
Quercus stellata - Carya (carolinae-septentrionalis, glabra) - (Quercus marilandica) / Ulmus alata / (Schizachyrium scoparium, Piptochaetium avenaceum) Woodland (CEGL003714)	4	Poor to Good	Plot 06-1433 contains more mesophytic herbaceous species
Juniperus virginiana var. virginiana - Ulmus alata / Schizachyrium scoparium Woodland (CEGL004443)	1	Fair	This plot does not contain substantial coverage of *Ulmus alata*
Pinus echinata - Pinus virginiana / Rhododendron minus - Kalmia latifolia Woodland (CEGL003563)	1	Fair	This plot does not contain any species of pine, nor any of the shrub nominals

CEGL	# of Plots	NVC Fit	Reason
Liriodendron tulipifera / Asimina triloba / Arundinaria gigantea ssp. gigantea Forest (CEGL004419)	2	Fair	The plots are not dominated by *Liriodendron tulipifera*
Liquidambar styraciflua / Lindera benzoin / Arisaema triphyllum ssp. triphyllum Forest (CEGL004418)	1	Poor	The canopy composition between the plot and association are dissimilar
Quercus phellos / Carex (albolutescens, intumescens, joorii) - Chasmanthium sessiliflorum / Sphagnum lescurii Forest (CEGL007403)	5	Poor to Excellent	Plot 04-1437 has species composition and geomorphologic characteristics better associated with a mesic hardpan forest

Appendix 3: Floristic tables for Association Groups

Floristic table for Group: I.A.1
CEGL006227

Number of Plots:	1		
Average Species Richness:	53	Species listed:	53
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Fagus grandifolia	100%	7
Viburnum acerifolium	100%	6
Quercus rubra	100%	6
Acer rubrum	100%	6
Liquidambar styraciflua	100%	5
Fraxinus americana	100%	5
Carpinus caroliniana	100%	5
Magnolia acuminata	100%	4
Liriodendron tulipifera var. tulipifera	100%	4
Carya alba	100%	4
Nyssa sylvatica	100%	4
Cercis canadensis	100%	4
Carya ovalis	100%	3
Vitis rotundifolia	100%	3
Vaccinium pallidum	100%	2
Oxydendrum arboreum	100%	2
Parthenocissus quinquefolia	100%	2
Cornus florida	100%	2
Viburnum prunifolium	100%	2
Poaceae	100%	2
Podophyllum peltatum	100%	2
Polystichum acrostichoides	100%	2
Toxicodendron radicans	100%	2
Prunus serotina	100%	2
Quercus alba	100%	2
Rosa	100%	2
Smilax bona-nox	100%	2
Smilax glauca	100%	2
Polygonatum biflorum	100%	2
Dichanthelium boscii	100%	2
Amelanchier arborea	100%	2
Carex	100%	2
Desmodium	100%	2
Euonymus americanus	100%	2
Maianthemum racemosum	100%	2
Houstonia purpurea	100%	2
Juniperus virginiana	100%	2
Vitis cinerea	100%	1
Viola pedata	100%	1
Viola	100%	1
Agrimonia pubescens	100%	1
Thalictrum thalictroides	100%	1
Arisaema triphyllum	100%	1
Geranium maculatum	100%	1
Dichanthelium	100%	1
Oxalis	100%	1
Scutellaria elliptica	100%	1
Rubus	100%	1
Dioscorea quaternata	100%	1
Endodeca serpentaria	100%	1
Endodeca serpentaria	100%	1
Epifagus virginiana	100%	1
Galium circaezans	100%	1
Monotropa uniflora	100%	1

Floristic table for Group: I.A.2

CEGL007201

Number of Plots:	1		
Average Species Richness:	62	Species listed:	62
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Fagus grandifolia	100%	9
Carya glabra	100%	6
Liriodendron tulipifera	100%	6
Carya alba	100%	6
Acer rubrum	100%	5
Carya cordiformis	100%	4
Carpinus caroliniana	100%	3
Oxydendrum arboreum	100%	3
Fraxinus americana	100%	3
Magnolia acuminata	100%	2
Polystichum acrostichoides	100%	2
Vitis rotundifolia	100%	2
Parthenocissus quinquefolia	100%	2
Galium circaezans	100%	2
Prunus serotina	100%	2
Quercus alba	100%	2
Quercus velutina	100%	2
Rubus	100%	2
Solidago caesia	100%	2
Viburnum acerifolium	100%	2
Euonymus americanus	100%	2
Vaccinium pallidum	100%	2
Dioscorea quaternata	100%	2
Amelanchier	100%	2
Carex digitalis	100%	2
Maianthemum racemosum	100%	2
Cercis canadensis	100%	2
Actaea racemosa	100%	2
Toxicodendron radicans	100%	1
Quercus rubra	100%	1
Carex kraliana	100%	1
Sanicula canadensis	100%	1
Sassafras albidum	100%	1
Scutellaria lateriflora	100%	1
Smilax bona-nox	100%	1
Botrypus virginianus	100%	1
Uvularia perfoliata	100%	1
Arisaema triphyllum	100%	1
Anemone	100%	1
Viburnum prunifolium	100%	1
Viola	100%	1
Viola pedata	100%	1
Vitis	100%	1
Smilax glauca	100%	1
Morus rubra	100%	1
Diospyros virginiana	100%	1
Desmodium nudiflorum	100%	1
Geranium maculatum	100%	1
Iris cristata	100%	1
Liquidambar styraciflua	100%	1
Liquidambar styraciflua	100%	1
Cornus florida	100%	1
Celtis laevigata	100%	1
Monotropa uniflora	100%	1
Prenanthes	100%	1
Nyssa sylvatica	100%	1
Orchidaceae	100%	1
Chionanthus virginicus	100%	1
Chimaphila maculata	100%	1
Phryma leptostachya	100%	1
Polygonatum biflorum	100%	1
Chamaelirium luteum	100%	1
Endodeca serpentaria	100%	1

Floristic table for Group: I.A.3

CEGL008465

Number of Plots:	1		
Average Species Richness:	81	Species listed:	81
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Fagus grandifolia	100%	7
Polystichum acrostichoides	100%	6
Liriodendron tulipifera var. tulipifera	100%	6
Liquidambar styraciflua	100%	5
Carpinus caroliniana	100%	4
Phegopteris hexagonoptera	100%	4
Oxydendrum arboreum	100%	4
Acer floridanum	100%	4
Corylus americana	100%	3
Quercus velutina	100%	3
Ulmus alata	100%	3
Carya alba	100%	3
Brachyelytrum erectum	100%	3
Ilex	100%	2
Desmodium nudiflorum	100%	2
Lindera benzoin	100%	2
Arisaema triphyllum	100%	2
Maianthemum racemosum	100%	2
Nyssa sylvatica	100%	2
Viola	100%	2
Carex	100%	2
Parthenocissus quinquefolia	100%	2
Huperzia lucidula	100%	2
Adiantum pedatum	100%	2
Vitis rotundifolia	100%	2
Phryma leptostachya	100%	2
Poaceae	100%	2
Podophyllum peltatum	100%	2
Polygonatum biflorum	100%	2
Acer rubrum	100%	2
Prenanthes	100%	2
Panax quinquefolius	100%	2
Dioscorea quaternata	100%	2
Campsis radicans	100%	2
Cercis canadensis	100%	2
Chimaphila maculata	100%	2
Cornus florida	100%	2
Prunus serotina	100%	2
Botrypus virginianus	100%	2
Galium circaezans	100%	2
Epifagus virginiana	100%	2
Fraxinus americana	100%	2
Toxicodendron radicans	100%	2
Euonymus americanus	100%	2
Festuca subverticillata	100%	2
Asimina triloba	100%	2
Sanicula canadensis	100%	1
Smilax bona-nox	100%	1
Smilax glauca	100%	1
Sanguinaria canadensis	100%	1
Sanguinaria canadensis	100%	1
Viburnum prunifolium	100%	1
Rubus	100%	1
Ulmus rubra	100%	1
Quercus stellata	100%	1
Unknown	100%	1
Uvularia perfoliata	100%	1
Vaccinium pallidum	100%	1
Viburnum acerifolium	100%	1
Tiarella wherryi	100%	1
Smilax rotundifolia	100%	1
Celtis tenuifolia	100%	1
Quercus alba	100%	1
Quercus rubra	100%	1
Actaea racemosa	100%	1
Agrimonia pubescens	100%	1
Amelanchier	100%	1
Brassicaceae	100%	1
Carya cordiformis	100%	1
Carya pallida	100%	1
Dichanthelium	100%	1
Galium aparine	100%	1
Morus rubra	100%	1
Poa	100%	1
Carya glabra	100%	1
Passiflora lutea	100%	1
Geum canadense	100%	1
Lonicera sempervirens	100%	1
Ligustrum sinense	100%	1
Juglans nigra	100%	1
Ilex verticillata	100%	1
Goodyera pubescens	100%	1

Floristic table for Group: I.B.1

CEGL004542

Number of Plots:	4		
Average Species Richness:	73	Species listed:	74
Average Plot Size:	575	May be > avg. spp. richness	
Homoteneity:	68	due to ties	

Species	Constancy	Avg Cover Class
Carpinus caroliniana	100%	6
Acer floridanum	100%	6
Carya cordiformis	100%	6
Carex	100%	5
Ostrya virginiana	100%	5
Polystichum acrostichoides	100%	5
Fraxinus americana	100%	4
Cornus florida	100%	4
Lonicera japonica	100%	4
Ulmus rubra	100%	4
Quercus rubra	100%	3
Parthenocissus quinquefolia	100%	3
Maianthemum racemosum	100%	2
Galium aparine	100%	2
Toxicodendron radicans	100%	2
Sanicula	100%	2
Viola	100%	2
Quercus alba	75%	6
Cercis canadensis	75%	6
Podophyllum peltatum	75%	5
Adiantum pedatum	75%	4
Prunus serotina	75%	4
Actaea racemosa	75%	3
Ulmus alata	75%	3
Vitis	75%	3
Polygonatum biflorum	75%	2
Viburnum prunifolium	75%	2
Amphicarpaea bracteata	75%	2
Euonymus americanus	75%	2
Acer negundo	75%	2
Arisaema triphyllum	75%	2
Morus rubra	75%	2
Unknown	75%	2
Smilax bona-nox	75%	2
Smilax herbacea	75%	2
Galium circaezans	75%	2
Passiflora lutea	75%	1
Asimina triloba	50%	7
Staphylea trifolia	50%	6
Acer rubrum	50%	5
Tilia americana	50%	5
Liquidambar styraciflua	50%	4
Celtis laevigata	50%	4
Viburnum acerifolium	50%	3
Lindera benzoin	50%	3
Nyssa sylvatica	50%	3
Liriodendron tulipifera var. tulipifera	50%	3
Carya alba	50%	2
Vitis rotundifolia	50%	2
Carya glabra	50%	2
Carya glabra	50%	2
Sanguinaria canadensis	50%	2
Phegopteris hexagonoptera	50%	2
Corylus	50%	2
Eupatorium	50%	2
Smilax glauca	50%	2
Lonicera sempervirens	50%	2
Rubus	50%	2
Uvularia perfoliata	50%	2
Smilax rotundifolia	50%	2
Prenanthes	50%	2
Festuca subverticillata	50%	2
Geum	50%	2
Juniperus virginiana	50%	2
Campsis radicans	50%	2
Ilex opaca	50%	2
Oxalis	50%	2
Solidago	50%	2
Dichanthelium	50%	2
Galium triflorum	50%	1
Potentilla	50%	1
Asplenium platyneuron	50%	1
Botrypus virginianus	50%	1
Liriodendron tulipifera	25%	5
Cystopteris protrusa	25%	5

Floristic table for Group: I.B.2

CEGL008466

Number of Plots:	8		
Average Species Richness:	89	Species listed:	94
Average Plot Size:	625	May be > avg. spp. richness	
Homoteneity:	64	due to ties	

Species	Constancy	Avg Cover Class
Polystichum acrostichoides	100%	6
Toxicodendron radicans	100%	3
Carex	100%	2
Parthenocissus quinquefolia	100%	2
Viburnum acerifolium	100%	2
Polygonatum biflorum	100%	2
Arisaema triphyllum	100%	2
Fagus grandifolia	88%	7
Acer floridanum	88%	6
Carpinus caroliniana	88%	6
Quercus rubra	88%	5
Carya cordiformis	88%	4
Lonicera japonica	88%	4
Galium aparine	88%	3
Ulmus rubra	88%	3
Lindera benzoin	88%	2
Podophyllum peltatum	88%	2
Euonymus americanus	88%	2
Maianthemum racemosum	88%	2
Ostrya virginiana	75%	6
Asimina triloba	75%	6
Fraxinus americana	75%	5
Quercus alba	75%	4
Ulmus alata	75%	4
Cornus florida	75%	3
Acer rubrum	75%	3
Acer negundo	75%	3
Stellaria pubera	75%	2
Galium triflorum	75%	2
Uvularia perfoliata	75%	2
Botrypus virginianus	75%	2
Phryma leptostachya	75%	2
Galium circaezans	75%	2
Prunus serotina	75%	2
Dichanthelium	75%	2
Geum canadense	75%	2
Smilax rotundifolia	75%	2
Liriodendron tulipifera var. tulipifera	63%	6
Vitis	63%	4
Adiantum pedatum	63%	4
Festuca subverticillata	63%	3
Actaea racemosa	63%	3
Cercis canadensis	63%	2
Sanguinaria canadensis	63%	2
Poaceae	63%	2
Smilax glauca	63%	2
Amphicarpaea bracteata	63%	2
Euonymus atropurpureus	63%	2
Unknown	63%	2
Dioscorea quaternata	63%	2
Dioscorea quaternata	63%	2
Smilax bona-nox	63%	1
Carya alba	50%	5
Nyssa sylvatica	50%	4
Celtis	50%	3
Prenanthes	50%	3
Juglans nigra	50%	2
Oxydendrum arboreum	50%	2
Anemone americana	50%	2
Pinus virginiana	50%	2
Poa	50%	2
Carya glabra	50%	2
Iris cristata	50%	2
Eurybia divaricata	50%	2
Hydrangea arborescens	50%	2
Viola	50%	2
Corylus americana	50%	2
Viburnum prunifolium	50%	2
Bignonia capreolata	50%	2
Solidago	50%	2
Vitis rotundifolia	50%	2
Sanicula canadensis	50%	1
Uvularia sessilifolia	50%	1
Microstegium vimineum	50%	1
Smilax herbacea	50%	1
Endodeca serpentaria	50%	1
Morus rubra	38%	3
Carya ovata	38%	2
Geranium maculatum	38%	2
Phegopteris hexagonoptera	38%	2
Luzula	38%	2
Asplenium platyneuron	38%	2
Oxalis	38%	2
Poa cuspidata	38%	2
Viola sororia	38%	2
Ranunculus recurvatus	38%	1
Campsis radicans	38%	1
Smilax hispida	38%	1
Cryptotaenia	38%	1
Juniperus virginiana	38%	1
Galearis spectabilis	38%	1
Solidago caesia	38%	1
Chamaelirium luteum	38%	1
Lonicera sempervirens	38%	1

Floristic table for Group: I.C.1

CEGL004415

Number of Plots:	1		
Average Species Richness:	48	Species listed:	48
Average Plot Size:	500	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Quercus montana	100%	8
Vaccinium pallidum	100%	6
Quercus rubra	100%	5
Pinus virginiana	100%	5
Carya ovata	100%	5
Nyssa sylvatica	100%	4
Moss	100%	4
Viburnum acerifolium	100%	4
Vaccinium stamineum	100%	4
Amelanchier arborea	100%	4
Lichen	100%	4
Acer rubrum	100%	4
Hieracium venosum	100%	3
Fraxinus americana	100%	3
Vitis rotundifolia	100%	3
Lonicera sempervirens	100%	2
Pinus strobus	100%	2
Solidago	100%	2
Pleopeltis polypodioides	100%	2
Prunus serotina	100%	2
Quercus coccinea	100%	2
Unknown	100%	2
Parthenocissus quinquefolia	100%	2
Brassicaceae	100%	2
Lespedeza violacea	100%	2
Acer negundo	100%	2
Asplenium platyneuron	100%	2
Carya alba	100%	2
Carya glabra	100%	2
Cornus florida	100%	2
Cunila origanoides	100%	2
Danthonia spicata	100%	2
Diospyros virginiana	100%	2
Euonymus americanus	100%	1
Albizia	100%	1
Gaylussacia	100%	1
Juniperus virginiana	100%	1
Ulmus alata	100%	1
Astragalus	100%	1
Robinia	100%	1
Houstonia purpurea	100%	1
Quercus phellos	100%	1
Chimaphila maculata	100%	1
Quercus alba	100%	1
Dichanthelium	100%	1
Potentilla	100%	1
Polygonatum biflorum	100%	1
Campanula divaricata	100%	1

Floristic table for Group: II.A.1

CEGL007232

Number of Plots:	2		
Average Species Richness:	73	Species listed:	81
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	69	due to ties	

Species	Constancy	Avg Cover Class
Quercus alba	100%	7
Acer floridanum	100%	6
Quercus velutina	100%	6
Acer rubrum	100%	6
Cercis canadensis	100%	6
Quercus rubra	100%	4
Fraxinus americana	100%	4
Cornus florida	100%	4
Nyssa sylvatica	100%	4
Vitis rotundifolia	100%	4
Juniperus virginiana	100%	3
Parthenocissus quinquefolia	100%	3
Carya carolinae-septentrionalis	100%	2
Galium circaezans	100%	2
Prunus serotina	100%	2
Polygonatum biflorum	100%	2
Brachyelytrum erectum	100%	2
Euonymus americanus	100%	2
Endodeca serpentaria	100%	2
Uvularia perfoliata	100%	2
Celtis occidentalis	100%	2
Rosa carolina	100%	2
Dichanthelium boscii	100%	2
Smilax glauca	100%	2
Crataegus	100%	1
Sanicula	100%	1
Toxicodendron radicans	100%	1
Carex	100%	1
Ostrya virginiana	50%	6
Carya cordiformis	50%	6
Carpinus caroliniana	50%	5
Liriodendron tulipifera var. tulipifera	50%	5
Quercus stellata	50%	5
Viburnum acerifolium	50%	4
Hamamelis virginiana	50%	4
Pinus echinata	50%	4
Carya glabra	50%	4
Oxydendrum arboreum	50%	4
Fagus grandifolia	50%	4
Ulmus alata	50%	3
Dirca palustris	50%	3
Cornus alternifolia	50%	2
Viburnum rafinesquianum	50%	2
Rubus	50%	2
Rubus allegheniensis	50%	2
Rhododendron periclymenoides	50%	2
Scleria oligantha	50%	2
Smilax herbacea	50%	2
Smilax rotundifolia	50%	2
Ulmus rubra	50%	2
Ulmus rubra	50%	2
Uvularia sessilifolia	50%	2
Vaccinium pallidum	50%	2
Viola	50%	2
Vitis aestivalis	50%	2
Viburnum prunifolium	50%	2
Clematis occidentalis	50%	2
Polystichum acrostichoides	50%	2
Amelanchier arborea	50%	2
Amphicarpaea bracteata	50%	2
Anemone americana	50%	2
Arisaema triphyllum	50%	2
Bignonia capreolata	50%	2
Botrypus virginianus	50%	2
Carex digitalis var. macropoda	50%	2
Carya alba	50%	2
Castanea pumila	50%	2
Chrysogonum virginianum	50%	2
Desmodium nudiflorum	50%	2
Lindera benzoin	50%	2
Podophyllum peltatum	50%	2
Piptochaetium avenaceum	50%	2
Phryma leptostachya	50%	2
Chamaelirium luteum	50%	2
Maianthemum racemosum	50%	2
Dioscorea quaternata	50%	2
Hexastylis minor	50%	2
Agrimonia	50%	2
Galium trifidum	50%	2
Smilax bona-nox	50%	2
Euonymus atropurpureus	50%	2
Morus rubra	50%	2

Floristic table for Group: II.A.2

CEGL007773-2010Pied

Number of Plots:	4		
Average Species Richness:	52	Species listed:	52
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	65	due to ties	

Species	Constancy	Avg Cover Class
Quercus alba	100%	7
Carya alba	100%	6
Juniperus virginiana	100%	5
Fraxinus americana	100%	5
Acer rubrum	100%	5
Vaccinium stamineum	100%	2
Uvularia perfoliata	100%	2
Smilax glauca	100%	2
Euonymus americanus	100%	2
Cercis canadensis	75%	5
Acer floridanum	75%	4
Vitis rotundifolia	75%	4
Quercus velutina	75%	4
Prunus serotina	75%	4
Cornus florida	75%	3
Parthenocissus quinquefolia	75%	3
Carya glabra	75%	2
Liquidambar styraciflua	75%	2
Carex	75%	2
Dichanthelium boscii	75%	2
Smilax rotundifolia	75%	2
Endodeca serpentaria	75%	2
Danthonia spicata	75%	2
Smilax bona-nox	75%	2
Rosa carolina	75%	2
Quercus stellata	50%	5
Nyssa sylvatica	50%	4
Lonicera japonica	50%	4
Piptochaetium avenaceum	50%	2
Viburnum prunifolium	50%	2
Oxalis	50%	2
Melica mutica	50%	2
Viola	50%	2
Polygonatum biflorum	50%	2
Desmodium	50%	2
Quercus rubra	50%	2
Vitis aestivalis	50%	2
Rubus	50%	2
Asplenium platyneuron	50%	2
Passiflora lutea	50%	2
Morus rubra	50%	2
Galium circaezans	50%	2
Diospyros virginiana	50%	2
Dichanthelium	50%	2
Chionanthus virginicus	50%	2
Polystichum acrostichoides	50%	2
Scutellaria	50%	1
Unknown	50%	1
Crataegus	50%	1
Celtis laevigata	50%	1
Celtis laevigata	50%	1
Acer saccharinum	25%	6
Carya carolinae-septentrionalis	25%	4

Floristic table for Group: II.B.1
CEGL006271

Number of Plots:	2		
Average Species Richness:	27	Species listed:	37
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	69	due to ties	

Species	Constancy	Avg Cover Class
Quercus montana	100%	7
Oxydendrum arboreum	100%	6
Acer rubrum	100%	6
Nyssa sylvatica	100%	5
Quercus alba	100%	4
Vaccinium stamineum	100%	4
Sassafras albidum	100%	3
Viburnum acerifolium	100%	2
Fagus grandifolia	100%	2
Juniperus virginiana	100%	1
Kalmia latifolia	50%	6
Quercus velutina	50%	4
Liriodendron tulipifera var. tulipifera	50%	3
Vaccinium pallidum	50%	3
Vaccinium tenellum	50%	2
Prunus serotina	50%	2
Gaylussacia baccata	50%	2
Cornus florida	50%	2
Carya pallida	50%	2
Gaultheria procumbens	50%	2
Euonymus americanus	50%	2
Chionanthus virginicus	50%	2
Chimaphila maculata	50%	2
Goodyera pubescens	50%	2
Carya glabra	50%	2
Carya alba	50%	2
Carex	50%	2
Liquidambar styraciflua	50%	2
Amelanchier arborea	50%	2
Geum	50%	2
Toxicodendron radicans	50%	2
Polygonatum biflorum	50%	2
Chimaphila umbellata	50%	2
Viburnum rufidulum	50%	2
Quercus coccinea	50%	2
Quercus	50%	2
Viola rotundifolia	50%	2

Floristic table for Group: II.B.2
CEGL007244

Number of Plots:	2		
Average Species Richness:	38	Species listed:	39
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	67	due to ties	

Species	Constancy	Avg Cover Class
Quercus alba	100%	7
Acer rubrum	100%	7
Quercus coccinea	100%	6
Nyssa sylvatica	100%	5
Quercus falcata	100%	5
Juniperus virginiana	100%	5
Liquidambar styraciflua	100%	4
Smilax glauca	100%	2
Vitis rotundifolia	100%	2
Chionanthus virginicus	100%	2
Amelanchier	100%	2
Prunus serotina	100%	2
Parthenocissus quinquefolia	100%	1
Quercus velutina	50%	6
Quercus stellata	50%	6
Oxydendrum arboreum	50%	6
Carya carolinae-septentrionalis	50%	6
Ulmus alata	50%	4
Quercus phellos	50%	4
Fraxinus americana	50%	3
Vaccinium stamineum	50%	3
Diospyros virginiana	50%	3
Pinus virginiana	50%	2
Vaccinium fuscatum	50%	2
Vaccinium tenellum	50%	2
Chasmanthium laxum	50%	2
Vaccinium pallidum	50%	2
Unknown	50%	2
Viburnum prunifolium	50%	2
Fagus grandifolia	50%	2
Viburnum rafinesquianum	50%	2
Smilax rotundifolia	50%	2
Danthonia spicata	50%	2
Euonymus americanus	50%	2
Moss	50%	2
Pinus echinata	50%	2
Quercus	50%	2
Carex	50%	2
Campsis radicans	50%	2

Floristic table for Group: II.B.3

CEGL008475

Number of Plots:	3		
Average Species Richness:	54	Species listed:	74
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	68	due to ties	

Species	Constancy	Avg Cover Class
Quercus alba	100%	7
Acer rubrum	100%	7
Nyssa sylvatica	100%	5
Fraxinus americana	100%	4
Vaccinium pallidum	100%	4
Cornus florida	100%	4
Carya alba	100%	4
Vitis rotundifolia	100%	4
Quercus stellata	100%	3
Diospyros virginiana	100%	2
Euonymus americanus	100%	2
Parthenocissus quinquefolia	100%	2
Endodeca serpentaria	100%	2
Quercus coccinea	67%	6
Liquidambar styraciflua	67%	5
Oxydendrum arboreum	67%	5
Quercus rubra	67%	5
Smilax rotundifolia	67%	4
Pinus echinata	67%	3
Carya carolinae-septentrionalis	67%	3
Liriodendron tulipifera var. tulipifera	67%	3
Vaccinium tenellum	67%	3
Vaccinium stamineum	67%	2
Pinus virginiana	67%	2
Chionanthus virginicus	67%	2
Piptochaetium avenaceum	67%	2
Prunus serotina	67%	2
Quercus velutina	67%	2
Smilax glauca	67%	2
Ulmus alata	67%	2
Juniperus virginiana	67%	2
Cercis canadensis	67%	2
Danthonia spicata	67%	2
Galium circaezans	67%	2
Dichanthelium	67%	2
Chimaphila maculata	67%	2
Carex	67%	2
Viburnum rufidulum	67%	2
Toxicodendron radicans var. radicans	67%	1
Crataegus	67%	1
Gelsemium sempervirens	67%	1
Lonicera sempervirens	67%	1
Hypericum hypericoides	67%	1
Quercus phellos	33%	6
Fagus grandifolia	33%	4
Carya glabra	33%	2
Vaccinium fuscatum	33%	2
Antennaria plantaginifolia	33%	2
Aureolaria	33%	2
Scleria oligantha	33%	2
Scleria oligantha	33%	2
Juniperus virginiana var. virginiana	33%	2
Uvularia puberula	33%	2
Amelanchier	33%	2
Carya ovata	33%	2
Vitis aestivalis	33%	2
Smilax bona-nox	33%	2
Scutellaria	33%	2
Moss	33%	2
Scleria	33%	2
Hypericum	33%	2
Viburnum acerifolium	33%	2
Morus rubra	33%	2
Euphorbia corollata	33%	2
Eubotrys racemosa	33%	2
Dioscorea quaternata	33%	2
Polygonatum biflorum	33%	2
Prenanthes	33%	2
Desmodium nudiflorum	33%	2
Sanicula	33%	2
Chasmanthium laxum	33%	2
Rosa carolina	33%	2
Rubus trivialis	33%	2
Desmodium rotundifolium	33%	2
Hexastylis lewisii	33%	2

Floristic table for Group: II.C.1
CEGL006281

Number of Plots:	2		
Average Species Richness:	20	Species listed:	25
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	75	due to ties	

Species	Constancy	Avg Cover Class
Quercus montana	100%	7
Oxydendrum arboreum	100%	7
Acer rubrum	100%	6
Vaccinium pallidum	100%	6
Vaccinium stamineum	100%	5
Nyssa sylvatica	100%	4
Pinus echinata	100%	4
Quercus alba	100%	3
Quercus velutina	100%	2
Smilax glauca	100%	2
Quercus	50%	4
Quercus coccinea	50%	4
Amelanchier arborea	50%	3
Robinia nana	50%	2
Gaylussacia baccata	50%	2
Quercus stellata	50%	2
Diospyros virginiana	50%	2
Pinus virginiana	50%	2
Vaccinium corymbosum	50%	2
Carya alba	50%	2
Fagus grandifolia	50%	2
Chimaphila maculata	50%	2
Quercus rubra	50%	2
Chimaphila umbellata	50%	2
Juniperus virginiana var. virginiana	50%	2

Floristic table for Group: III.A.1
CEGL008522-2010Pied

Number of Plots:	1		
Average Species Richness:	34	Species listed:	34
Average Plot Size:	100	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Quercus rubra	100%	6
Quercus montana	100%	6
Vaccinium pallidum	100%	4
Diospyros virginiana	100%	3
Lonicera sempervirens	100%	2
Hieracium venosum	100%	2
Fraxinus americana	100%	2
Clitoria mariana	100%	2
Quercus phellos	100%	2
Carex	100%	2
Vaccinium stamineum	100%	2
Carya glabra	100%	2
Carya alba	100%	2
Danthonia spicata	100%	2
Solidago	100%	1
Rosa carolina	100%	1
Rhus aromatica	100%	1
Acer rubrum	100%	1
Antennaria plantaginifolia	100%	1
Asplenium platyneuron	100%	1
Prunus serotina	100%	1
Polygonatum biflorum	100%	1
Pleopeltis polypodioides	100%	1
Coreopsis	100%	1
Parthenocissus quinquefolia	100%	1
Lespedeza hirta var. hirta	100%	1
Hypericum	100%	1
Fagus grandifolia	100%	1
Euphorbia pubentissima	100%	1
Carya ovata	100%	1
Dichanthelium depauperatum	100%	1
Dichanthelium	100%	1
Desmodium	100%	1
Pinus virginiana	100%	1

Floristic table for Group: III.B.1

CEGL003714

Number of Plots:	4		
Average Species Richness:	62	Species listed:	64
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	70	due to ties	

Species	Constancy	Avg Cover Class
Quercus alba	100%	6
Ulmus alata	100%	6
Vitis rotundifolia	100%	6
Juniperus virginiana	100%	6
Quercus stellata	100%	5
Acer rubrum	100%	5
Quercus phellos	100%	4
Liquidambar styraciflua	100%	4
Unknown	100%	3
Lonicera japonica	100%	2
Smilax rotundifolia	100%	2
Euonymus americanus	100%	2
Carex	100%	2
Diospyros virginiana	100%	2
Smilax glauca	100%	2
Parthenocissus quinquefolia	100%	2
Campsis radicans	100%	2
Lonicera sempervirens	100%	2
Carya glabra	75%	5
Fraxinus americana	75%	5
Vaccinium tenellum	75%	4
Quercus rubra	75%	3
Prunus serotina	75%	2
Vaccinium stamineum	75%	2
Danthonia spicata	75%	2
Quercus velutina	75%	2
Smilax bona-nox	75%	2
Chionanthus virginicus	75%	2
Ilex verticillata	75%	2
Oxalis	75%	2
Polygonatum biflorum	75%	2
Endodeca serpentaria	75%	2
Toxicodendron radicans	75%	1
Carya carolinae-septentrionalis	50%	6
Carya alba	50%	5
Nyssa sylvatica	50%	4
Acer floridanum	50%	4
Cornus florida	50%	4
Dichanthelium boscii	50%	3
Quercus falcata	50%	3
Cercis canadensis	50%	2
Asplenium platyneuron	50%	2
Desmodium	50%	2
Galium	50%	2
Scleria	50%	2
Rosa carolina	50%	2
Carya ovata	50%	2
Hypericum	50%	2
Galium circaezans	50%	2
Viburnum prunifolium	50%	2
Viburnum prunifolium	50%	2
Scutellaria integrifolia	50%	2
Solidago	50%	2
Rubus	50%	2
Hypericum hypericoides	50%	2
Dichanthelium	50%	2
Hieracium venosum	50%	1
Houstonia caerulea	50%	1
Chimaphila maculata	50%	1
Coreopsis verticillata	50%	1
Uvularia perfoliata	50%	1
Ruellia	50%	1
Ulmus americana	25%	3
Carpinus caroliniana	25%	3
Vaccinium	25%	3

Floristic table for Group: IV.A.1

CEGL004443

Number of Plots:	1		
Average Species Richness:	81	Species listed:	81
Average Plot Size:	400	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Juniperus virginiana	100%	7
Pleopeltis polypodioides	100%	6
Quercus stellata	100%	5
Quercus rubra	100%	5
Acer rubrum	100%	5
Carya alba	100%	4
Carya glabra	100%	4
Carya cordiformis	100%	4
Schizachyrium scoparium	100%	4
Nyssa sylvatica	100%	4
Pinus echinata	100%	4
Campsis radicans	100%	4
Quercus falcata	100%	4
Carpinus caroliniana	100%	4
Danthonia spicata	100%	3
Rhus copallinum	100%	3
Vaccinium pallidum	100%	3
Ulmus alata	100%	3
Poa chapmaniana	100%	2
Pityopsis	100%	2
Piptochaetium avenaceum	100%	2
Parthenocissus quinquefolia	100%	2
Prunus serotina	100%	2
Oxydendrum arboreum	100%	2
Quercus alba	100%	2
Polygonatum biflorum	100%	2
Quercus phellos	100%	2
Rhododendron periclymenoides	100%	2
Sassafras albidum	100%	2
Smilax bona-nox	100%	2
Smilax rotundifolia	100%	2
Solidago	100%	2
Stylosanthes biflora	100%	2
Unknown	100%	2
Vaccinium tenellum	100%	2
Viburnum rafinesquianum	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Lonicera japonica	100%	2
Vaccinium stamineum	100%	2
Hieracium venosum	100%	2
Commelina erecta	100%	2
Coreopsis verticillata	100%	2
Cercis canadensis	100%	2
Cunila origanoides	100%	2
Desmodium	100%	2
Dichanthelium commutatum	100%	2
Carex pensylvanica	100%	2
Dichanthelium dichotomum	100%	2
Dichanthelium laxiflorum	100%	2
Clematis viorna	100%	2
Clematis viorna	100%	2
Fraxinus americana	100%	2
Ipomoea	100%	2
Lespedeza repens	100%	2
Euphorbia pubentissima	100%	2
Lespedeza hirta var. hirta	100%	2
Antennaria plantaginifolia	100%	2
Ionactis linariifolia	100%	2
Hypoxis hirsuta	100%	2
Asteraceae	100%	1
Asplenium platyneuron	100%	1
Artemisia	100%	1
Vicia	100%	1
Salvia lyrata	100%	1
Antennaria	100%	1
Lespedeza virginica	100%	1
Cheilanthes lanosa	100%	1
Chimaphila maculata	100%	1
Verbesina occidentalis	100%	1
Passiflora lutea	100%	1
Viola	100%	1
Lonicera sempervirens	100%	1
Microstegium vimineum	100%	1
Silene virginica	100%	1
Lactuca	100%	1
Hypericum hypericoides	100%	1
Houstonia caerulea	100%	1
Diospyros virginiana	100%	1
Dichanthelium depauperatum	100%	1
Cornus florida	100%	1
Sedum ternatum	100%	1
Liquidambar styraciflua	100%	1

Floristic table for Group: V.A.1

CEGL003563

Number of Plots:	1		
Average Species Richness:	48	Species listed:	48
Average Plot Size:	100	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Piptochaetium avenaceum	100%	8
Fraxinus americana	100%	8
Quercus montana	100%	7
Quercus rubra	100%	5
Danthonia spicata	100%	5
Rosa carolina	100%	4
Vaccinium stamineum	100%	4
Carya ovata	100%	4
Lespedeza violacea	100%	4
Lonicera sempervirens	100%	3
Carya alba	100%	3
Centrosema	100%	3
Vaccinium pallidum	100%	3
Dichanthelium	100%	3
Rhus aromatica	100%	3
Hieracium venosum	100%	3
Ailanthus altissima	100%	3
Pleopeltis polypodioides	100%	2
Prunus serotina	100%	2
Quercus alba	100%	2
Carex	100%	2
Quercus stellata	100%	2
Parthenocissus quinquefolia	100%	2
Smilax bona-nox	100%	2
Solidago	100%	2
Uvularia sessilifolia	100%	2
Vitis rotundifolia	100%	2
Schizachyrium scoparium	100%	2
Euonymus americanus	100%	2
Moss	100%	2
Carya glabra	100%	2
Asplenium platyneuron	100%	2
Dioscorea	100%	2
Diospyros virginiana	100%	2
Endodeca serpentaria	100%	2
Euphorbia pubentissima	100%	2
Antennaria	100%	2
Galactia volubilis	100%	2
Lespedeza hirta var. hirta	100%	2
Lespedeza repens	100%	2
Acer rubrum	100%	1
Galium	100%	1
Unknown	100%	1
Cunila origanoides	100%	1
Amelanchier	100%	1
Carpinus caroliniana	100%	1
Pinus virginiana	100%	1
Quercus phellos	100%	1

Floristic table for Group: VI.A.1

CEGL004413

Number of Plots:	1		
Average Species Richness:	47	Species listed:	47
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Quercus alba	100%	7
Quercus stellata	100%	7
Vitis rotundifolia	100%	6
Vaccinium tenellum	100%	6
Juniperus virginiana	100%	6
Pinus echinata	100%	5
Pinus virginiana	100%	5
Quercus falcata	100%	5
Vaccinium stamineum	100%	5
Acer rubrum	100%	5
Nyssa sylvatica	100%	5
Quercus coccinea	100%	4
Vaccinium fuscatum	100%	4
Fraxinus americana	100%	4
Carya carolinae-septentrionalis	100%	4
Diospyros virginiana	100%	3
Quercus marilandica	100%	3
Prunus serotina var. serotina	100%	2
Rhododendron viscosum	100%	2
Smilax rotundifolia	100%	2
Vaccinium pallidum	100%	2
Moss	100%	2
Quercus phellos	100%	2
Lyonia	100%	2
Ilex opaca var. opaca	100%	2
Amelanchier	100%	2
Gaylussacia baccata	100%	2
Danthonia spicata	100%	2
Carex	100%	2
Chionanthus virginicus	100%	2
Smilax glauca	100%	1
Euonymus americanus	100%	1
Aronia arbutifolia	100%	1
Campsis radicans	100%	1
Ulmus alata	100%	1
Chimaphila maculata	100%	1
Viburnum rafinesquianum	100%	1
Ilex	100%	1
Liquidambar styraciflua	100%	1
Toxicodendron radicans var. radicans	100%	1
Ipomoea	100%	1
Rosa carolina	100%	1
Hypericum stragulum	100%	1
Danthonia sericea	100%	1
Crataegus marshallii	100%	1
Crataegus	100%	1
Quercus velutina	100%	1

Floristic table for Group: VII.A.1

CEGL004419

Number of Plots:	2		
Average Species Richness:	89	Species listed:	114
Average Plot Size:	700	May be > avg. spp. richness	
Homoteneity:	70	due to ties	

Species	Constancy	Avg Cover Class
Acer rubrum	100%	7
Carpinus caroliniana	100%	6
Lindera benzoin	100%	5
Polygonatum biflorum	100%	5
Liquidambar styraciflua	100%	5
Lonicera japonica	100%	4
Ulmus alata	100%	4
Fraxinus americana	100%	4
Arisaema triphyllum	100%	4
Carex blanda	100%	4
Smilax rotundifolia	100%	3
Galium aparine	100%	3
Viburnum prunifolium	100%	3
Persicaria virginiana	100%	2
Euonymus americanus	100%	2
Clematis	100%	2
Vitis	100%	2
Viola	100%	2
Vitis rotundifolia	100%	2
Parthenocissus quinquefolia	100%	2
Toxicodendron radicans	100%	2
Poa	100%	2
Unknown	100%	2
Polystichum acrostichoides	100%	2
Quercus rubra	100%	2
Rubus	100%	2
Smilax glauca	100%	2
Oxalis	100%	2
Carex	100%	2
Boehmeria cylindrica	100%	2
Juniperus virginiana	100%	2
Campsis radicans	100%	2
Solidago	100%	2
Dichanthelium	100%	2
Quercus phellos	100%	1
Aureolaria flava	50%	7
Saururus cernuus	50%	5
Liriodendron tulipifera var. tulipifera	50%	5
Betula nigra	50%	4
Ostrya virginiana	50%	4
Liriodendron tulipifera	50%	4
Bignonia capreolata	50%	3
Itea virginica	50%	3
Ulmus americana	50%	3
Amphicarpaea	50%	3
Sanicula	50%	3
Ilex verticillata	50%	3
Cornus florida	50%	3
Cicuta	50%	3
Carex retroflexa	50%	2
Carex retroflexa	50%	2
Carex grayi	50%	2
Salvia lyrata	50%	2
Impatiens capensis/pallida complex	50%	2
Staphylea	50%	2
Corylus americana	50%	2
Smilax hispida	50%	2
Elymus	50%	2
Smilax bona-nox	50%	2
Sambucus nigra	50%	2
Cornus	50%	2
Rudbeckia laciniata	50%	2
Rudbeckia	50%	2
Eutrochium fistulosum	50%	2
Ranunculus recurvatus	50%	2
Carya cordiformis	50%	2
Uvularia perfoliata	50%	2
Chionanthus virginicus	50%	2
Carex debilis	50%	2
Alnus serrulata	50%	2
Amphicarpaea bracteata	50%	2
Vicia caroliniana	50%	2
Apios americana	50%	2
Symplocarpus foetidus	50%	2
Uvularia sessilifolia	50%	2
Botrypus virginianus	50%	2
Aster	50%	2
Ulmus rubra	50%	2
Celtis	50%	2
Asteraceae	50%	2
Stellaria pubera	50%	2
Sceptridium biternatum	50%	2
Viburnum dentatum	50%	2
Lobelia	50%	2
Orchidaceae	50%	2
Microstegium vimineum	50%	2
Menispermum canadense	50%	2
Melica mutica	50%	2
Maianthemum racemosum	50%	2
Lycopus	50%	2
Osmunda cinnamomea	50%	2
Carex intumescens	50%	2
Geum	50%	2
Glyceria	50%	2

Floristic table for Group: VII.A.2
CEGL007730

Number of Plots:	1		
Average Species Richness:	35	Species listed:	35
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Acer negundo	100%	7
Fraxinus pennsylvanica	100%	7
Platanus occidentalis	100%	7
Lindera benzoin	100%	6
Toxicodendron radicans	100%	6
Celtis laevigata	100%	5
Ligustrum japonicum	100%	5
Ulmus americana	100%	5
Carex grayi	100%	4
Elymus virginicus var. virginicus	100%	4
Persicaria	100%	3
Smilax hispida	100%	3
Viola	100%	3
Laportea canadensis	100%	3
Alliaria petiolata	100%	3
Viburnum prunifolium	100%	2
Vitis aestivalis	100%	2
Verbesina alternifolia	100%	2
Asimina triloba	100%	2
Bidens	100%	2
Sanicula canadensis	100%	2
Carex	100%	2
Impatiens capensis	100%	2
Persicaria virginiana	100%	2
Parthenocissus quinquefolia	100%	2
Microstegium vimineum	100%	2
Galium aparine	100%	2
Ligustrum sinense	100%	2
Geum canadense	100%	2
Juglans nigra	100%	1
Smilax rotundifolia	100%	1
Wisteria sinensis	100%	1
Bignonia capreolata	100%	1
Rubus	100%	1
Carex typhina	100%	1

Floristic table for Group: VII.B.1

CEGL004418

Number of Plots:	1		
Average Species Richness:	86	Species listed:	86
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Quercus michauxii	100%	8
Carya carolinae-septentrionalis	100%	7
Liquidambar styraciflua	100%	6
Acer rubrum	100%	6
Nyssa sylvatica	100%	5
Campsis radicans	100%	4
Smilax rotundifolia	100%	4
Danthonia spicata	100%	4
Arisaema triphyllum	100%	3
Eubotrys racemosa	100%	3
Scutellaria	100%	2
Glyceria striata	100%	2
Fraxinus americana	100%	2
Houstonia	100%	2
Isoetes	100%	2
Galium obtusum var. filifolium	100%	2
Hypericum hypericoides	100%	2
Juncus	100%	2
Leersia virginica	100%	2
Rubus trivialis	100%	2
Lonicera sempervirens	100%	2
Luzula echinata	100%	2
Quercus phellos	100%	2
Moss	100%	2
Oxalis dillenii	100%	2
Poa	100%	2
Poaceae	100%	2
Parthenocissus quinquefolia	100%	2
Carex ovalis	100%	2
Viola	100%	2
Amelanchier	100%	2
Apocynum cannabinum	100%	2
Asteraceae	100%	2
Uvularia sessilifolia	100%	2
Carex	100%	2
Ulmus americana	100%	2
Ulmus alata	100%	2
Thalictrum	100%	2
Carex intumescens	100%	2
Euonymus americanus	100%	2
Carex typhina	100%	2
Lonicera japonica	100%	2
Toxicodendron radicans var. radicans	100%	2
Sisyrinchium	100%	2
Sphagnum	100%	2
Solidago	100%	2
Carpinus caroliniana	100%	2
Smilax glauca	100%	2
Dioscorea quaternata	100%	2
Smilax herbacea	100%	2
Smilax herbacea	100%	2
Scleria	100%	1
Quercus alba	100%	1
Vitis aestivalis var. aestivalis	100%	1
Viburnum prunifolium	100%	1
Ranunculus	100%	1
Quercus falcata	100%	1
Sassafras albidum	100%	1
Prunus serotina	100%	1
Sanicula	100%	1
Quercus coccinea	100%	1
Crataegus	100%	1
Lobelia	100%	1
Prenanthes alba	100%	1
Ambrosia artemisiifolia	100%	1
Asclepias	100%	1
Bidens	100%	1
Carex crinita	100%	1
Carex glaucescens	100%	1
Carya ovata	100%	1
Clematis	100%	1
Desmodium	100%	1
Dichanthelium boscii	100%	1
Diospyros virginiana	100%	1
Lycopus	100%	1
Potentilla	100%	1
Mitchella repens	100%	1
Cephalanthus occidentalis	100%	1
Melica	100%	1
Endodeca serpentaria	100%	1
Luzula multiflora	100%	1
Liriodendron tulipifera var. tulipifera	100%	1
Lindernia dubia var. dubia	100%	1
Juniperus virginiana	100%	1
Ilex decidua	100%	1
Hexastylis lewisii	100%	1
Eupatorium	100%	1

Floristic table for Group: VIII.A.1

CEGL007403

Number of Plots:	5		
Average Species Richness:	54	Species listed:	54
Average Plot Size:	880	May be > avg. spp. richness	
Homoteneity:	59	due to ties	

Species	Constancy	Avg Cover Class
Acer rubrum	100%	6
Quercus phellos	100%	6
Liquidambar styraciflua	100%	6
Smilax rotundifolia	100%	6
Vitis rotundifolia	100%	4
Carex	100%	3
Diospyros virginiana	100%	2
Smilax glauca	100%	2
Toxicodendron radicans	100%	2
Nyssa sylvatica	80%	5
Ulmus alata	80%	5
Smilax bona-nox	80%	2
Juncus	80%	1
Carya carolinae-septentrionalis	60%	6
Vaccinium fuscatum	60%	5
Lonicera japonica	60%	4
Danthonia spicata	60%	4
Fraxinus pennsylvanica	60%	3
Cornus florida	60%	2
Carya alba	60%	2
Dichanthelium	60%	2
Quercus alba	60%	2
Campsis radicans	60%	2
Oxalis	60%	2
Parthenocissus quinquefolia	60%	2
Endodeca serpentaria	60%	2
Hypericum hypericoides	60%	2
Rosa carolina	60%	2
Asplenium platyneuron	60%	1
Quercus stellata	40%	5
Eubotrys racemosa	40%	5
Juniperus virginiana	40%	5
Ulmus americana	40%	5
Vaccinium stamineum	40%	3
Prunus serotina	40%	3
Ilex decidua	40%	3
Moss	40%	3
Viburnum prunifolium	40%	2
Carya glabra	40%	2
Acer floridanum	40%	2
Carpinus caroliniana	40%	2
Ilex	40%	2
Ilex opaca	40%	2
Fraxinus americana	40%	2
Ulmus rubra	40%	2
Rubus allegheniensis	40%	2
Rubus sect. Dewberry	40%	2
Potentilla canadensis	40%	2
Carex hirsutella	40%	2
Carex blanda	40%	2
Carex blanda	40%	2
Morus rubra	40%	2
Microstegium vimineum	40%	2
Cephalanthus occidentalis	40%	2
Euonymus americanus	40%	2